

### AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

#### Listing of Claims:

Claim 1 (cancelled).

Claim 2 (currently amended): The ~~tubular structure~~ intracorporeal medical device of claim [[1]] 29, wherein the loops are moveable to reposition relative to each other as the tubular structure is bent.

Claim 3 (currently amended): The ~~tubular structure~~ intracorporeal medical device of claim [[1]] 29, wherein the bonding point is at one end of the support layer and the remaining portion of the support layer is the free portion.

Claim 4 (currently amended): The ~~tubular structure~~ intracorporeal medical device of claim [[1]] 29, wherein the structure is flexible around a .75 to 1.50 radius object without kinking.

Claim 5 (currently amended): ~~A medical tubular structure comprising~~ The intracorporeal medical device of claim 29, wherein:

~~an overlying layer and~~ the overlying layer is formed as a thermally shrinkable sheath forming a lumen extending through at least a portion of the tubular structure;

~~the thermally shrinkable sheath having a plurality of etches on at least its interior surface, a support layer comprising a contiguous coil element, a braid element or a weave element including a plurality of loops, the support layer being attached to the sheath at a bonding point and further having a free portion, wherein the free portion of the support layer is slippable relative to the sheath; and~~

~~wherein the sheath encases and contacts the support layer and the support layer and sheath are slippable relative to one another along the free portion.~~

Claim 6 (currently amended): The ~~tubular structure~~ intracorporeal medical device of claim 5, wherein the sheath comprises a polytetrafluoroethylene material.

Claim 7 (**currently amended**): The ~~tubular structure~~ intracorporeal medical device of claim 6, wherein the sheath comprises PTFE, Teflon<sup>®</sup>, FEP and/or PFA.

Claim 8 (**currently amended**): The ~~tubular structure of claim 5~~ intracorporeal medical device of claim 29, wherein the support layer includes the contiguous coil element comprised of a wire and a plurality of gaps between each loop, the gaps being of sufficient size to resist kinking of the tubular structure.

Claim 9 (**currently amended**): The ~~tubular structure~~ intracorporeal medical device of claim 8, wherein the length of each gap is about 10-200 percent of the width of the wire.

Claim 10 (**currently amended**): The ~~tubular structure~~ intracorporeal medical device of claim 8, wherein the structure is flexible around a .25 to .50 radius object without kinking.

Claim 11 (**currently amended**): ~~A medical tubular structure comprising~~ The intracorporeal medical device of claim 29, wherein:

~~an underlying layer and the overlying layer is formed as a thermally shrinkable sheath forming a lumen extending through at least a portion of the tubular structure, the thermally shrinkable sheath~~ having a plurality of etches on at least its interior surface, the sheath encasing at least a portion of the ~~underlying~~ support layer by heat-reduction of 25 percent or less of an original diameter of the sheath ~~and substantially maintaining the etches during the heat-reduction.~~

Claim 12 (**currently amended**): The ~~tubular structure~~ intracorporeal medical device of claim 11, wherein the sheath comprises a polytetrafluoroethylene material.

Claim 13 (**currently amended**): The ~~tubular structure~~ intracorporeal medical device of claim 12, wherein the sheath comprises PTFE, Teflon<sup>®</sup>, FEP and/or PFA.

Claim 14 (**currently amended**): The ~~tubular structure~~ intracorporeal medical device of claim 13, wherein the ~~underlying~~ support layer includes the contiguous coil element comprised of a wire and a plurality of gaps between each loop, the gaps being of sufficient size to resist kinking of the tubular structure.

**Claim 15 (currently amended):** The ~~tubular structure~~ intracorporeal medical device of claim 14, wherein the length of each gap is about 10-200 percent of the width of the wire.

**Claim 16 (currently amended):** The ~~tubular structure~~ intracorporeal medical device of claim 10, wherein the sheath is bonded to the ~~underlying support layer in~~ at a bonding point located at least one end of the sheath and the sheath is capable of slipping along the underlying support layer as the tubular structure is bent.

**Claim 17 (currently amended):** The ~~tubular structure~~ intracorporeal medical device of claim 16, wherein the structure is flexible around a .25 to .50 radius object without kinking.

**Claim 18 (cancelled).**

**Claim 19 (currently amended):** The intracorporeal medical device of claim ~~26~~ 29, wherein the at least a portion of the support layer includes gaps between each loop of the coiled element, the gaps being of sufficient size to resist kinking of the tubular structure.

**Claim 20 (cancelled).**

**Claim 21 (currently amended):** The intracorporeal medical device of claim ~~[[20]]~~ 29, further comprising a drive system and a control system to direct rotation of the drive shaft.

**Claims 22-26 (cancelled).**

**Claim 27 (currently amended):** ~~An~~ The intracorporeal medical device of claim ~~26~~ 29, wherein the operating head comprises a cutter.

**Claim 28 (currently amended):** ~~An~~ The intracorporeal medical device of claim ~~26~~ 29, wherein the catheter comprises a proximal section having the least flexibility, a mid section and a distal section having the most flexibility and the distal section comprises the ~~medial~~ tubular structure of claim 1.

**Claim 29 (new):** An intracorporeal medical device comprising:

- (a) an operating head;
- (b) a catheter comprising a tubular structure, the tubular structure comprising:  
an overlying layer and a support layer defining an internal lumen, wherein the support layer comprises a contiguous coil element, a braid element or a weave element including a plurality of loops, the support layer being attached to the overlying layer at a bonding point and not attached to the overlying layer along a free portion, whereby the support layer is slippable relative to the overlying layer along the free portion when the tubular structure is bent; and
- (c) a drive shaft extending within, and rotatable and translatable within, the internal lumen of the catheter.

**Claim 30 (new):** The intracorporeal medical device of claim 29, wherein the support layer of the tubular structure is welded to the operating head.

**Claim 31 (new):** The intracorporeal medical device of claim 29, wherein the support layer incorporates a less flexible support element at or near the bonding point.

**Claim 32 (new):** The intracorporeal medical device of claim 5, wherein etches are provided on interior and exterior surfaces of the sheath.

**Claim 33 (new):** The intracorporeal medical device of claim 5, wherein etches are provided at discrete portions of the tubular structure.

**Claim 34 (new):** The intracorporeal medical device of claim 5, wherein etches are provided across the entire length of the sheath surface.

**Claim 35 (new):** The intracorporeal medical device of claim 28, wherein the mid section includes a less flexible area that does not incorporate a support layer.